Amendments to the Specification:

The proposed drawing corrections filed on September 11, 2003 have been approved. In order to reflect the renumbering of drawings included in those changes, Applicant respectfully requests the changes to the Specification described below be made.

Please replace the BRIEF DESCRIPTION OF THE DRAWINGS section with the following amended section:

BRIEF DESCRIPTION OF THE DRAWINGS

A complete understanding of the present invention may be obtained by reference to the accompanying drawings, when considered in conjunction with the subsequent detailed description, in which:

FIGURE 1 illustrates a schematic diagram of an upconversion mechanism avoiding cross relaxation;

~~FIGURE 2 depicts a schematic diagram of an upconversion mechanism for a Tm-Ho YAG laser system;~~

~~FIGURES 3a and 3b~~ FIGURES 2a and 2b are graphical views of energy storage lifetime versus Pulse Repetition Frequency for Tm-Ho and Ho YAG laser systems, respectively;

~~FIGURE 4~~ FIGURE 3 illustrates a schematic view of upconversion mechanisms in Yttrium-Erbium glass; and

~~FIGURE 5~~ FIGURE 4 depicts a schematic of a fiber laser, pumped, eyesafe system in accordance with this invention.

Please replace the paragraph beginning on Page 9, Line 5, with the following amended paragraph:

~~Referring to FIGURE 2, levels and cross relaxation mechanisms are shown for the Tm-sensitized o laser. The $^5I_7$ upper laser level is fed by the cross relaxation mechanism shown as the $^5I_7$, population builds the upconversion mechanism dominates. The consequence of this is a rapidly decreasing storage lifetime with pump intensity, or stored energy (gain).~~

Please replace the paragraph beginning on Page 9, Line 12, with the following amended paragraph:

Referring to ~~FIGURE 3~~ FIGURE 2, the measured Tm-Ho:YAG pulse energy is illustrated as a function of Pulse Repetition Frequency (RPF). The laser is pumped to a high gain and the effective lifetime is inferred from the energy/pulse vs. PRF. From this data, a lifetime of 190μs is achieved, in marked contrast to the spectroscopic lifetime of 5ms for the $^{S}I_7$ transition.

Please replace the paragraph beginning on Page 9, Line 19, with the following amended paragraph:

It has been demonstrated that in unsensitized Ho:YAG in dilute concentration, upconversion is negligible even at high gain. ~~FIGURE 3~~ FIGURE 2 alone shows the pulse energy vs. PRF of Ho: YAG, from which a lifetime of 3ms is inferred. Ho:YAG is being developed for high pulse energies in 3D Lidar and remote sensing applications. A 10mJ/diode bar of Q-switched, two micron output has already been demonstrated. However, this two micron transition is out of band to I^2 devices.

Please replace the paragraph beginning on Page 10, Line 9, with the following amended paragraph:

Referring to ~~FIGURE 4~~ FIGURE 3, the level diagrams in the case of Tm-Ho, as the population of the $^{4}I_{13/2}$ state, illustrate increased upconversion, via the occurrence of near resonant cross relaxation. The spectroscopic lifetime of approximately 10 ms (in fluorides) is rapidly reduced by the rate for this cross relaxation process to the extent that it becomes of the order of the pumping rate. At this point, the population density is "clamped"; stronger pumping does not increase stored energy. Yb-Er glass lasers are notoriously low gain (i.e., low energy storage) devices.

Please replace the paragraph beginning on Page 11, Line 10, with the following amended paragraph:

With reference to ~~FIGURE 5~~ FIGURE 4, Er fiber lasers, 1.5 micron diode bars, and diode pumped Yb-Er glass in long pulse lasers, are illustrated in the system of this invention. ~~FIGURE 5~~ FIGURE 4 is a schematic view of a 250mJ, Q-switched, eyesafe laser system, arrow 10. The pump source for the Erbium-Yttrium Lithium Fluoride laser 14 comprises two 30W Er fiber lasers 12 emitting at 1.5 microns. Sixty watts of pumped energy stored for 10ms correspond to 600mJ of pumped energy.